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CP372

Assignment 2 - Documentation

Datagram Format

Sender Datagrams consist of the following byte arrays, concatenated together. The fileBuffer section holds the packet’s data read from the file, and the seqNum section is just a single byte counting upward (or in the case of Stop & Wait, alternates between 0 and 1). seqNum signifies EOT when -1 in Stop & Wait, and -2 in Go-Back-N. Receiver “ack” Datagrams send back a value of 1 in Stop & Wait, and the last received seqNum in Go-Back-N.

*Sender:* (seqNum = Byte[1]) + (fileBuffer = Byte[124])

*Receiver:* ack = Byte[1]

Stop and Wait Timing

Small file size (1kb):

|  |  |  |
| --- | --- | --- |
| **Reliability number** | **Time (0.5 second timeout)** | **Time (1.5 second timeout)** |
| 0 | 5ms | 5ms |
| 10 | 5ms | 5ms |
| 100 | 5ms | 5ms |

Observation: File size is too small for reliability to effect transmission time.

Large file size (1.1mb):

|  |  |  |
| --- | --- | --- |
| **Reliability number** | **Time (0.5 second timeout)** | **Time (1.5 second timeout)** |
| 0 | 2593ms | 2688ms |
| 10 | 549994ms | 1606087ms |
| 100 | 61292ms | 153275ms |

**Timing Report**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Stop & Wait   |  |  |  | | --- | --- | --- | |  | Small File (Approx. 2KB) | Large File (Approx. 1MB) | | timeout = 0.05 |  |  | | reliability = 0 | 6 | 1568 | | reliability = 10 | 56 | 51661 | | reliability = 100 | 8 | 6278 | | timeout = 0.025 |  |  | | reliability = 0 | 7 | 1760 | | reliability = 10 | 32 | 26698 | | reliability = 100 | 6 | 4044 | | Go-Back-N   |  |  |  | | --- | --- | --- | |  | Small File (Approx. 2KB) | Large File (Approx. 1MB) | | timeout = 0.05 |  |  | | windowSize = 10  reliability = 0 | 8 | 1181 | | windowSize = 10  reliability = 10 | 52 |  | | windowSize = 10  reliability = 100 | 8 |  | | windowSize = 40  reliability = 0 | 7 | 1297 | | windowSize = 40  reliability = 10 | 33 |  | | windowSize = 40  reliability = 100 | 6 |  | | windowSize = 80  reliability = 0 | 6 |  | | windowSize = 80  reliability = 10 | 31 |  | | windowSize = 80  reliability = 100 | 6 |  | | timeout = 0.025 |  |  | | windowSize = 40  reliability = 0 | 6 |  | | windowSize = 40  reliability = 10 | 37 |  | | windowSize = 40  reliability = 100 | 8 |  | |